

**California State Lands Commission
Marine Invasive Species Program
Vessel Fouling Technical Advisory Group
Meeting Notes
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Meeting Notes

Chris Scianni – Welcome, introductions. The purpose of these meetings is to address our current mandate to develop regulations managing vessel fouling, but we also must make sure we satisfy the purpose of our guiding legislation (Marine Invasive Species Act; MISA) which is to move the state expeditiously towards the elimination of the discharge of NIS into state waters.

Today, want to discuss two scenarios where we believe current CSLC regulations are not adequate to meet the MISA: high risk stochastic vessels and niche areas. Some niche areas: dry dock strips, propeller, rudder, sea chests/gratings, keel, areas that provide protection from high velocity flow.

Current requirements are to remove fouling organisms on a “regular basis”, defined as any of the following: a) expiration of the vessel’s safety construction certificate, b) expiration of USCG cert of inspection, or c) no longer than 60 months since last out of water dry docking. Most of fleet falls within 60 month range but even so, certain areas still pose problems (e.g. niche areas). We also have a requirement to rinse anchors/chains upon retrieval, and in-water cleaning conducted in CA must use best available technologies (BAT) economically achievable, and to minimize coatings and cleanings products in surrounding waters. Additional requirements by the California State Water Resources Control Board (Water Board) through U.S. EPA Vessel General Permit (VGP) limit in-water cleaning for ships with biocide-based coatings in port areas. Ok to clean non-toxic coatings in port areas or can clean vessels with biocidal coatings in-water outside breakwater in LA/LB. Finally, every vessel operating in CA is required to submit the Hull Husbandry Reporting Form once a year. So to start off today, want to get ideas from international community on what others are doing to address biofouling on commercial ships. We have here today the co-chairs from the IMO ballast water and biofouling working group.

Naomi Parker – Discussion of IMO process. Spent last 3 years bringing info together, discussing options for managing biofouling. Organization agreed to develop guidelines for management of biofouling. Guidelines are close to final, complete draft with a couple of outstanding issues, including the definitions of microfouling and macrofouling, and debate about in-water cleaning tools. Need to work through document paragraph by paragraph at BLG 15 [scheduled for February].

Guidelines propose keeping vessels as clean as practicable. Best standard for vessels is to maintain no more than a slime layer, anything greater than slime represents significant risk. IMO is working through development of guidelines for recreational vessels. Last BLG meeting, a standalone document for recreational vessels discussed different language for maintenance, much simpler description of requirements. Easier to pull out smaller vessels. Working through that process, won’t be finalized until February. Also discussing criteria for evaluating guidelines. May implement mandatory measures eventually, but the logical first step is guidelines. Need criteria to evaluate guidelines to determine if they are sufficient or if a convention is necessary. Need to discuss timeline for evaluation.

One component of guidelines is a biofouling management plan and logbook, essentially the same approach as ballast water. Management plan includes how biofouling managed on vessel. Record book would be specific to activities undertaken on the vessel. Working group Identified biofouling management plan as critical. It was brought forward in guidelines as key to changing behavior of vessels. A holistic view of how to manage a vessel. Looking at something similar in New Zealand (NZ) as well. Many conventions require documentation. Trying to align requirements with other conventions. Something that’s easy for vessel owners to use, and for port state officials to understand.

Chris Wiley – Reiterate what Naomi said. What we're trying to do at IMO is standardize the process. Focus on things that ships today do all the time, trying to make it consistent. Focus on things that are actually going to work and aren't new for ship owners.

Naomi Parker – We are building on current technologies as much as possible. Trying to take existing technologies and think about them in a slightly different way. Vessels need to manage biofouling for invasive species not just for operational purposes. Hope guidelines will push the development of new technologies for cleaning, optimize tools and/or develop new ones.

Greg Ruiz – Has there been any discussion about the frequency of cleaning? How is that going? Where is the correspondence group looking for guidance as to what frequency should be? There's huge variation across vessel and operational types. The key element is guidance - how often and when and how.

Naomi Parker – The guidelines don't go into that level of detail. They describe situations where in-water cleaning might be appropriate. Clean niche areas before they become heavily fouled, but it doesn't give time lines. We may be able to get into that level of detail in supporting guidance documents in the future. In NZ, we're thinking about how to frame requirements for import health standard. Need to have a range of decision supporting tools, but not make that decision for each vessel. We've steered away from that route because management tools need to be unique to vessel or vessel type.

John Kelly – With respect to recreational vessels, we've been working with the Port of San Diego looking at biocides that are being used.

Naomi Parker – Still some finessing around which vessels the guidelines will apply to. Does it apply to a vessel if it stays in one port (e.g. Long Beach) or only on international voyages? Probably won't change what is recommended, but need to target.

Chris Scianni – So to move things towards what we hope to discuss at this meeting, Ian Davidson is going to give a shortened version of the presentation he gave yesterday at our Prevention First Symposium, focusing on high-risk stochastic vessels and niche areas.

Ian Davidson – [Review of talk from Prevention First]. When talking about clean hulls on these slides, we mean clean of algae and macroinvertebrates, not necessarily clean of slime layer. We've created presence/absence plots for various taxa on barges, cruise ships, containerships that we've sampled (list of taxa in successional order). We sampled some of the containerships with ROV, so for these we were less likely to detect mobile species. Didn't see sponges and ascidians etc... Cruise ships have lots of niche areas, but we didn't find lots of

bivalves. See some mobile species that don't normally associate with fouling. Cruise ships seem to have more species, but need to build on dataset. Overall, we've looked at 48 vessels so far.

To highlight niche area, barges had pretty rich biofouling communities. Ladder holes can harbor diverse communities; we sampled thousands of organisms in one hole. For container ships, there was not a lot of fouling. Minority of ships with more than 1 square meter of fouling. Cruise ships had more fouling in bow thrusters vs. bow hull and stabilizers vs. stern hull. In thrusters and stabilizers you can find dense reefs of species. Research from Coutts and Taylor (2004) showed that the hull and other laminar flow areas tend not to have large communities of macroinvertebrates and algae. SERC only sampled handful of sea chests in dry docks, due to safety concerns we can't sample while diving. Coutts and Dodgshun (2007) looked at sea chests. Sampled 62 species in one sea chest, and we're probably underestimating number of species. Can find unusual worms, other organisms in sea chests. Nice unique microhabitat so often it's different than regular fouling. Need to manage vessels in more holistic way, not just for efficiency. What is the niche-area fouling penalty? No fuel cost penalty, but definitely an invasive species issue.

Need to examine stochastic vessels. We did a review of existing biofouling papers. Most vessels had only few species, but long tail to graph, with rich diverse communities on stochastic vessels –not regular in-service ships. Stochastic vessels move under unusual circumstances, and include platforms, docks... They are different than regular ships, involving higher biofouling richness. Some examples of stochastic movements: 1) USS Missouri – Puget Sound to Hawaii, did result in introduction of species; 2) Semi-submersible rig in Singapore, 25 decapod species, 13 introductions to Singapore; 3) Ghost fleet ship studies moved from San Francisco (SF) Bay to Texas. Surprisingly, number of species increased by end of voyage. Slow tow moving through tropical waters, organisms colonized along the way. Upon arrival in Texas, there was less extent of fouling but more species.

John Berge – Weren't the vessels cleaned in SF Bay?

Ian Davidson – Not these. They were moved several years before the cleaning process was started.

Factors that contribute to risks from stochastic voyages – 1) long lay-up (pre-voyage), 2) almost no hull maintenance, 3) slow voyage (get towed around), and 4) long duration at destination port (long time available for introductions to occur).

Chris Scianni – We'd like to open up discussion around the agenda. Ian painted a good picture of the issues we would like to address at this meeting. First, stochastic vessels. Where do you draw the line to put ships into this category?

Based on long layup duration? Low maintenance? Slow speeds? Need some agreement about where to draw the line.

Ian Davidson – For example, how long of layup duration would be unacceptable?

Chris Scianni – California doesn't have mobile drilling platforms like in other parts of the world, but we do have mobile cranes and other types of vessels that can be considered high-risk...

Ian Davidson – Things that crop up every now and again. There is a need to find out if/when it is happening.

Maurya Falkner – And then what?

Ian Davidson – Naomi's idea of clean before you go.

Naomi Parker – Two subsets of stochastic vessels. 1) Ships of shame – poorly maintained vessels; 2) Vessels more prone to accumulation such as mobile rigs, slow vessels. Can have heavily fouled commercial vessel, but the way to deal with it might be different for each vessel. Example – Mobile drilling rig off the coast of NZ, going to relocate to Australia. It had NZ green mussel all over. Australians wanted it cleaned before movement, but also had South African mussels on it, thus a risk to NZ. Only found out through cleaning though. If there were cleaning requirements in place before it got to NZ, then they could have had it cleaned before it left South Africa. Working with industry to develop biofouling management plans for those types of vessels. Evaluate risk before arrival to NZ. We know we're going to have a reasonable time frame in advance to have conversations about management.

Ian Davidson – What process is in place to notify Biosecurity NZ of these vessels?

Naomi Parker – Good relationship with industry. They notify us in advance. Petroleum industry had to pay for cleaning on rig, now they have a more proactive approach.

John Berge – For prohibiting or regulating vessel cleaning, is it a command and control scheme? Is it done based on authority on an ad hoc basis or is there a pre-established risk mechanism? Do you have flexibility? There's a concern that CA is trying to fit this into a regulatory vs. voluntary scheme.

Naomi Parker – Can inspect any vessel coming into NZ for risk organisms based on Biosecurity Act. Don't have specific requirements for biofouling. Also have Maritime Transport Act. We decided that fouling activities are not considered to be normal operations, so permit would be required before in-water cleaning. Under Resource Management Act, we have authority out to 12 nm; Maritime Act

gives authority out to 200 nm. We are working with industry on a mix of voluntary and mandatory ideas, largely working collaboratively. We're going to go along the track of requiring biofouling management plan. We will need different plan for different vessels.

Ian Davidson – How would you find out about non-petroleum vessels?

Naomi Parker – For slow moving vessels we would probably find out. Ships of shame, won't be able to predict.

Ian Davidson - SERC was contacted about a rig leaving the Gulf of Mexico and going to Australia.

Greg Ruiz – How well do you detect things that come in? What is decision matrix for deciding which vessels are high risk? What must be done? If vessels must be inspected, what are the protocols and who does it? Are there certifications? SERC was contacted by private company, asked to come to Gulf of Mexico to inspect rig. We couldn't do it. What are the requirements in Australia? Are there people certified to do inspections? Not all inspections equal. We weren't clear on what the requirements would be. What are the criteria for NZ inspections? Are there written guidelines? Some level of documentation?

Naomi Parker – Inspection in NZ would have a contract specifying what we're looking for. We want physical specimens. In NZ, Cawthron Institute could do it. They can fly to where ship can be accessed. Also have marine invasive taxonomic service set up at NIWA where inspections of vessels are sent and info provided back to Biosecurity NZ.

Greg Ruiz – Is there a list to do for each and every event so that you get back some level coverage and have fairly good confidence about types of organisms?

Naomi Parker – Standard protocol would be useful. Only used a couple of times so far. Would make a lot of sense. Wouldn't need to be very complicated.

Greg Ruiz – Sounds like Biosecurity NZ goes by cover and species ID. Assessment based on species? If on black list then raises red flag. But for some species, even if cover is high not a big risk [species may be native or endemic].

Naomi Parker – It's a balancing act. Ideally we want nothing more than slime layer, but there are examples where some vessels have lots of cosmopolitan species, and that's not a big deal. What would be equivalent level of protection to keep risk towards level of slime? If there are no risky organisms on board, just cosmopolitan species, is that ok? Would an equivalent level of protection be rendering everything non-viable (killing) everything on vessel? Fouling material would be there, but it would be dead so it would minimized risk. We're working

through these issues. How to explain simply for regulations? Can industry provide some ideas for level of protection?

Greg Ruiz- Multiple levels of risk assessment: 1) cover of biofouling, 2) composition of fouling. Even if you have biofouling, if composition is not high risk, then may be permissible or treated differently.

Naomi Parker – That's the general idea, but not always possible. We're working through it.

Chris Scianni – Are there any mechanisms in place for us [CA] to get better notification?

Maurya Falkner – How do we identify these vessels? We get info from marine exchanges, but these deal with commercial vessels. How much info do we get for off-the-wall vessels?

Tom Burke - 3 day notification from the marine exchanges.

Maurya Falkner – For projects (e.g. working on bridges) get an application, and more notice. How do we distribute information? Get network going, and then what are we going to do? Mobile barges for dredging etc. What criteria to inspect? Maybe have a protocol to hand out to dive companies, entities doing that kind of work. Short of a good network, we get 96 hour advance arrival or 24 hours if coming down coast.

Chris Scianni – For large projects there is a lengthy permit process etc...

Maurya Falkner – Need to develop a relationship with Bay Conservation and Development Commission (BCDC), Coastal Commission.

John Berge – US Army Corps of Engineers?

Maurya Falkner –We used to get everything [information about permits, applications...] from state clearing house. Resources have been dramatically cut. Now, information may come to us, but no staff to assess it.

Greg Ruiz – This group focuses on commercial vessels traffic because...?

Maurya Falkner – We regulate anything over 300 gross registered tons capable of carrying ballast.

Greg Ruiz – Side list of other mechanisms of transport outside of that umbrella. Wouldn't have fallen under commercial type. Keep list of other agencies, some other groups that can close that loop.

Chris Wiley – In the Arctic, necessary level of risk reduction is similar. Canadian Energy Board doesn't regulate, they insist that shipping world works on contracts. If you have risk reduction strategy, put it in contract. Strategy is to put it in commercial contract, not in regulation. For example, bringing a US-owned vessel into dry dock in the arctic in 1980's. No regulations, but could say it shall be delivered under charter party perfectly clean. Way of dealing with the industry as they have always been dealt with, part of a commercial contract.

Greg Ruiz – Would work for state/federal interaction with charter, but not private-private contract.

Chris Wiley – Could also work private/private.

John Kelly – Keep guidelines as simple as possible and distribute.

Maurya Falkner – We have authority over lands submerged and title. Can incorporate language into leases etc... But long coastline, lots of stuff that gets beyond us. What falls under our authority? Every rig that has capacity to ballast falls under state law.

Greg Ruiz – Notification and identification of who is coming in and having protocols to distribute, these are good directions to go. NZ model would be good to implement. Taxonomic analysis is a sticking point, particularly challenging. Functionally, how to process quickly? Philosophically, what [species] is ok and what isn't? There are different viewpoints in different parts of the world. White list/black list, how to deal with them? Genotypes and pathogens that aren't seen. Whole series of decision points come into play. As CA comes in – rapid analysis of community and the guidance about what species/organism level is ok. These won't be resolved in the near period, but decision points that are critical.

Maurya Falkner – We haven't gone that [species-specific] route in this program. Most other states are not going that route. Our approach is to look at the vector, define a level of cleanliness.

Greg Ruiz – Rather than community identification.

Naomi Parker – Our preference, want it to be clean.

Greg Ruiz – Much simpler approach, there are lots of complexities in sampling. Even with a good sampling scheme, you're not getting the entire community. There are gaps in the information.

Neil Escalante - Is CA qualified on the issue of taxonomy? Is it a major problem?

Greg Ruiz – There are people good at taxonomy in CA but taxonomy is always a problem. It's not a slam against the people who do it. Marine diversity is high with

many species that are new to science. There are taxonomic specialists for each [organism] group. But there are gaps in our ability to ID species, some never identified. Asian vessels, lots of diversity along Asia coasts, lots of species never described. Taxonomy systematics are important. Practical point of risk assessment there will be some major gaps. If you want to go to that level, you will only get a partial picture. You should identify levels of fouling rather than in weeds around each “nub.”

Maurya Falkner - In reality, most cases won't have opportunity to dive. Can ask, what are hull husbandry practices/biofouling plan, when were they last performed... When in violation, then what?

John Berge – Stochastic vessels, will there be efforts to keep them out of state waters until deemed clean? So, would effort be to get a whole group of operators/owners in another part of world to meet CA criteria before allowed in?

Maurya Falkner – Yes

Naomi Parker – Ideal situation

Maurya Falkner – ID subset of high risk vessels.

John Berge – Before come in get it cleaned. Take it somewhere to clean it, but that's their problem.

Nicole Dobroski – Those species may be native to that region.

Naomi Parker – Should be no risk to the environment in native region.

Steve Morin – But then won't it need to be cleaned in arrival location? Mothball fleet picked up organisms along the way.

Ian Davidson – True. If route includes sitting around, it can create another problem, you can run into trouble again. For CA purposes need to put language in place. If all agencies in CA know about fouling language, if anyone submits application to CA, agencies can require them to clean before they go. Concerned about details though.

Tom Burke – Isn't Hull Husbandry Reporting Form (HHRF) required within 60 days of arrival? Can we refer to that?

Maurya Falkner – It's an annual form. They get to us 60 days after we notify them.

Chris Scianni – But HHRF not a risk assessment for each vessel, it's an annual form solely for data gathering purposes.

Lynn Takata – Would we want to define stochastic vessels? Put boundaries on it? So agencies, when they contact us, know what to look for. Mothball fleet is clear, but some barges etc... fall into gray area. Something we want to try to discuss or is that jumping ahead?

Maurya Falkner – Have to discuss it. Have to identify what a stochastic vessel is. We don't have a definition yet. Are we ready to do that today?

John Kelly – Depends on where and what time of year. Some vessels (things) can foul in a day.

John Berge – Hard to put on-the-fly ad hoc authority into regulation.

Naomi Parker – Look for characteristics associated with certain types of vessels. Working with industry makes sense. For these types of vessels, need to provide prior reporting.

Ian Davidson – If it said something like six months, 99% ships won't have that issue, but it will catch that long tail on our graph – the really problematic ones. You'd want at least some language in place to ID those "long tail" vessels.

Lynn Takata – Some kind of time line would be useful so planning could go in before vessel is moved. Don't want to leave it open as to what might trigger action by SLC. Low hanging fruit sort of idea would be useful for vessels.

John Kelly – Maybe look at propeller cleaning frequency. Typically carried out at 3 month or 6 month frequency.

Ian Davidson – CA has own data (from HHRF) on what layups have been. Use that data as criteria. Most regular ships won't fall under that.

John Berge – How do you find out about those vessels? Six-month vessels?

Ian Davidson – Still hard, but language exists.

Maurya Falkner – We do have authority to send them back out if necessary.

Gail Ashton – Can you require info about new vessels? Submit info 30 days in advance for "new" vessel to CA. A window to decide if it can come in.

Chris Wiley – Running before starting to crawl. Still need management plan first. IDs what the requirements are for vessels. 1) Need management plan, and 2) need to do something with it. What do you need to put management plan in place? Then go to plan B and say, where is management plan, did you follow it? Base on international guidelines.

Maurya Falkner – IMO guidelines will clarify what everyone is doing. Concerned that what everyone is doing isn't good enough.

Naomi Parker – It's not quite like that. To the extent possible, we want to use stuff people are already doing, but we want a change in behavior. Ships do have a 5 year cycle, but don't think about what is the most effective sea chest coating. We want to think about fouling management in a different way, managing parts of vessel is not currently the focus.

Maurya Falkner – How to get that type of mind shift in a holistic approach to fouling?

Chris Wiley – Ships need to learn about liability of risk from biofouling. Leverage what is currently there and that will change things. Appropriate coatings vs. appropriate technology - coating is just one type of technology. All of those things are currently there, you just need to tweak it in direction you want to go.

John Kelly – Responsible operators want to do the right thing.

Naomi Parker – It's still useful to specify some vessel types as requiring prior reporting, different type of management plan such as vessels that are one big niche. For rest of fleet need biofouling management plans that include layup duration, maintenance, voyage speed. Use those things to decide to take action at border.

Greg Ruiz – Post border follow up if they've tripped all of the boxes. No one really knows if they are then prone to verification inspection.

Chris Wiley – Need all the documentation. Get written evidence before you ever worry about doing anything more than that. Leverage things that are there. Still need worst case scenario situation, but 98% time won't be dealing with worst case scenario.

Naomi Parker – Still need phase-in time. Variable uptake of guidelines, going to take time to implement. Building awareness, building compliance. Get documentation.

Maurya Falkner – New tasks for inspectors.

Chris Wiley – Part of that transition, give CD to vessels about our [CA] requirements. Give presentations to CEOs.

John Kelly – Already need IMO tin-free certificate. This is an extension of that.

Naomi Parker – Guidelines refer to AFS certification. Add additional elements.

John Berge – Separate type of certificate for CA?

Maurya Falkner – No, biofouling management plan. End up going through regulatory process to define. Taking everything IMO has, but identifying a little better.

John Berge – Plan modeled on IMO plan.

Naomi Parker – Guidelines have outline of what should be included in management plan, record book. If went down track of mandatory requirements then would be specific management plan or record book.

Steve Morin – Where can we get this IMO MEPC document?

Naomi Parker - BLG documents. Last report was for BLG 14. Will be going to BLG 15 report on working group.

John Kelly – IMO PSPC [Performance Standards for Protective Coatings] requires a coating technical file for ballast tanks. Now need one for fouling and ship operation. There are existing examples.

Chris Scianni – If our inspectors go on board and verify compliance, would we want to tweak HHRF? Do we want to tweak inspection based on information provided in advance? Switch form from info gathering to helping with inspection to target vessels that need outreach.

John Berge – For stochastic vessels, won't have reporting form from them.

Sarah Gowland – For stochastic vessels, do they have to report arrival in CA for other purposes?

Maurya Falkner – Under USCG rules, if they come from outside the US EEZ, there is a 96 hour advance arrival notice. Other requirements to get into port etc... Moving coastally, there's a 24 hour advance notice before arrival to next port.

Lisa Swanson – Yes, those are the main things.

Chris Wiley – Ballast Water Reporting Form serves as the de facto notice in advance. Doesn't CA get form?

Maurya Falkner – We get BW Reporting Form. We require it upon departure from every port call, not in advance. Because of this, our data are more accurate, but we don't have advance info.

Chris Wiley – It's surprising to not get notice of arrival, to know what is coming in.

Maurya Falkner – We get notice of arrival.

Tom Burke - Vessels may send BW Reporting Form in advance, and may change along the way. Required to send upon departure, but may send in advance. Each day we get Marine Exchange faxes with 3-day notice of arrivals. Create schedules for arrivals.

Chris Wiley – Relatively simple logistic thing. Look at list and find stochastic vessels and decide to inspect.

Maurya Falkner – We have matrix to decide to inspect. First time to CA, previous violation...

Tom Burke – We highlight any priority number 1 vessels on advance arrival.

Greg Ruiz - Can request biofouling plan, but no known history. Need good system in place to track vessels.

Chris Wiley – You can board the ship and determine where it has been quickly.

Naomi Parker – But that doesn't allow for preventative stuff. Still need relationships with industry, by the time the vessel is 96 hours away, you've lost the time to deal with vessel.

Maurya Falkner – We're starting to get tied up in implementation.

Chris Wiley – 96 hours out will let us know if they cleaned before arrival, it provides time to address.

Lynn Takata – CA receives 11,000 arrivals/forms a year. Need to go through to find out, logistically and personnel-wise it's difficult.

Naomi Parker – Needs to be automated.

Lynn Takata – Something to think about.

Chris Wiley – Have building blocks to do this, tweak building blocks.

Maurya Falkner – Like the idea of identifying type of vessel rather than time/behavior, focus these questions on types of vessels maybe not time frame of not having moved.

John Berge – Lots of ships laid up in other places and then moved.

Tom Burke – Even though ships send form in advance, we don't get form in office until after departure.

Greg Ruiz – Infrastructure's there. What tells me that a vessel was laid up in advance in Singapore? Seems like a gap to me.

Chris Wiley – For ships that are not regulars, we go through the eNav system for up to a year, shows history of arrival, where vessel has been globally.

John Berge – There are also commercial entities that vessel operators use for vetting. Not sure of the price tag associated, but I can tell give you info.

Greg Ruiz – Lloyd's will tell you, but need to pay for it. If vessel goes from Singapore to CA and that does not have prior history in CA, then you need some kind of trigger to go in and look up history of vessel on a case by case basis.

Chris Wiley – This is fairly automatic. It has to do with high risk ballast. We want to know where the vessel has been.

John Kelly – Vessel operator will typically dive and look at prop before leaving long layups.

Maurya Falkner – So they're doing this anyway, but they need to get in and look at other areas of vessel, change the mind set.

Sarah Gowland – Australia is working through a lot of the same stuff, developing relationships, risk protocols, etc... we have lots of information to share. We've seen resistance from bulk carrier industry to clean before they leave, but when we talk to operators/masters, it's actually a different story.

Daniel Kane – Clean before you go along the guidelines that will be developed or as how as been done in the past? Assume biofouling management plan will have cleaning standards?

Maurya Falkner – Yep.

Chris Scianni – Want to touch on some topics on agenda. What can we bring to the table for next meeting? One management plan for portion of fleet, and separate plan for stochastic vessels?

Maurya Falkner – I don't know. Biofouling management plan should be required. IMO will go down that road. We would not be inconsistent with international community if we did something like that.

Ian Davidson – How does industry feel about that?

John Berge – Hate to see administrative burden placed on 100s of vessels to achieve benefit for 1% of vessel.

Maurya Falkner - Management plan would address all vessels. Vessels that are well maintained are still a risk in niche areas. That's where management plan comes in. It's a cultural shift. If you dive to see prop, you should also do something with niche areas.

Greg Ruiz – Goal is the same across vessels with management plans, but the way it is applied will vary for regular operators vs. stochastic vessels. Regular vessels won't have to do too much different, but stochastic vessels will have to do a lot more.

Naomi Parker- Biofouling plan for rigs look different than commercial vessels. Same elements, but build in reporting in advance or wherever. Keep open management options for different types of vessels.

John Berge – Not concerned about additional burden of biofouling management plan, but concerned that there will be different requirements for rest of the world vs. in CA.

Naomi Parker – We do have a BW form for NZ, looks like the IMO BW convention one. Making sure we're not providing 5 forms for each vessel.

Chris Wiley – Next BLG meeting we should get approval for biofouling guidelines, then to MEPC, so approval likely by October [or July?] 2011. From an international point of view, roughly a year from now.

Lisa Swanson – From a commercial standpoint, the new management plan elements are easiest to put in another section of the BW management plan, keeps it all together.

Ian Davidson – Presumably vessels already keeping in-water cleaning info on board, just compile in plan in once place.

Maurya Falkner – CA not prescriptive in exactly what needs to be in BW plan. It's up to vessel owners, up to you, about how you keep it. We just need it all kept in one place.

Steve Morin – Chevron wouldn't want it in BW plan. Ours certified by ABS, so if wanted to add to it would need it recertified by ABS. Want it as separate.

Lynn Takata – A lot of studies are saying niche areas are still an issue. How is IMO addressing it? Through voluntary management plans, guidelines, what route? Clean those niche areas when go down to polish propeller? What is philosophy there?

Naomi Parker – As well as specifying what might go in biofouling plan and record book, whole section in draft guidelines about niche areas. There is a section around sea chests, procedures for cleaning, installation etc (basic guidance around niche areas). In biofouling plan, there's an approach specific for niche areas.

Chris Wiley – Anti-fouling coating system can be paint, cathodic protection, up to vessel. Would actually change wording to antifouling management system. We're saying keep it clean, it's up to ship owner how they do that.

Naomi Parker – This section includes info about MGPSs. Not just about coatings.

Lisa Swanson – Sea chests don't have to do with fuel efficiency and such, the maintenance is normal part of dry docking. That is something that we always do.

Maurya Falkner – Data show that the hull can be really clean and go around back and the thruster is loaded. So need to address in between dry dockings. How are those addressed?

Sarah Gowland – Looking at vessels on 5 yr cycle. Need other mandatory surveys. SOLAS may be useful.

Naomi Parker – If you're putting divers in the water for prop polishing, you should also look at critical niche areas. Also bag any obvious biofouling at that time. Keep fouling in niche areas under control.

Lisa Swanson – Some mention that they couldn't inspect inside gratings.

Chris Wiley – Open up steam and blow it out. That will keep it clean, it's not rocket science. Tell the engineer to keep it clean. Put in biofouling management plan, nothing more than weekly blow back of certain lines.

Lisa Swanson – But will we get in trouble about thermal effects from Water Board?

Harry Coulombe – It's in their best interest to keep them clean, to keep optimal flow.

Chris Wiley – Basic maintenance.

Gail Ashton – People that go to polish propeller can look at sea chest, but practicality of scraping and collecting not necessarily there.

Maurya Falkner – Need to push technology forward.

Ian Davidson – Retention big issue. Cleaning/MGPS will work on some systems, but not in all areas.

Chris Wiley – Systems exist to put in sea chests.

Maurya Falkner – Don't identify a type [of MGPS]. These things must be clean to a certain level; how you do it is your choice.

Richard Barta – We look at sea chests all the time. There are not a lot of systems in place to keep them clean. Sea chests will kill you in a hurry if there is a problem, there have been more than one diver killed by going into sea chests. These have to be addressed very carefully, shut the whole ship down. It's very dangerous.

Naomi Parker – Divers can look around grating; don't need to go into sea chest. Identify the problem and then manage in some way but not necessarily physical removal. Have seen systems installed in sea chests, but they aren't operated.

Harry Coulombe – Find lots of systems in nonoperational status. Some aren't working for a year, and no plan to get them back running.

Chris Wiley – Part of CA port state control inspection, let me look at black box. If not switched on, let's have a discussion.

Chris Scianni – Dry docking support blocks have been a problem on a number of ships. Most dry docks use alternating support areas or refloat. Do these happen the majority of the time?

John Kelly – Refloating is not very common. They will do it during initial application, but during a normal dry docking it's very unusual. We do see efforts to move block locations at the next dry docking.

Maurya Falkner – Basic ideas for biofouling management plan, we've got the framework in IMO. Then there's the idea of how to define stochastic vessels. Need to utilize data presented and move into something that's reducing the risk.

Chris Wiley – One thing I didn't say. Every ship coming into Canada has a mini risk assessment. Right now we have it in tables, but we're going to put it into computer form. If you come in, you get a risk assessment based on international matching of different risk areas; high, medium or low for direction of where you are going. From science point of view, same mini risk assessment could be done for hull fouling.

Naomi Parker – Direction we are going in. Range of pieces of information about vessel, including cargo, goods into NZ, goes into database. Identify from that which vessels will be inspected and for what. More risk-targeted approach rather

than just random inspection or 100% inspection. We want to target resources more carefully, and an automated system will help with that.

Think about the management of in-water cleaning and work with other agencies. If want to think seriously of using in-water cleaning as part of biofouling management plan, then you would need to enable it in CA. We would want vessels to clean here [CA] before they go to NZ, Australia etc. We are working with Australia around code of conduct for in-water cleaning. When would be most appropriate, etc. There is some very basic advice in IMO guidelines. Need to work into framework.

Steve Morin – Do you designate certain areas for cleaning?

Naomi Parker – Currently in-water cleaning is largely prohibited. There are no specific areas, but you can't manage biofouling in isolation. Bans are largely due to biocides, but we need to also recognize that in-water cleaning is an important part of biofouling approach. We need to balance outcomes and we're trying to work though that.

Sarah Gowland – In Australia, most jurisdictions don't allow biofouling cleaning outside of prop cleaning. We want to go down a control route, but there is a risk of not cleaning as well. We have developed an at-the-border risk assessment tool with pre-arrival documents. We're currently testing it at the moment. Want to work backwards and develop biofouling management plan. Easiest as regulators to have it standardized. We won't mandate that they have one, but for regular entries into Australia it will be better to adopt. We can work with CA to develop something similar.

Naomi Parker – Likewise, we will likely identify areas for in-water cleaning but we haven't done that yet. We will likely do this for recreational vessels, but for these recreational vessels it's a lot easier to just haul them out of the water.

Chris Scianni – Need to have chat with Water Board.

John Kelly – Working with Port of San Diego to monitor marinas, a lot of work is already being carried out with SCCWRP [Southern California Coastal Water Research Project].

Greg Ruiz –You'd need to identify inspection and verification protocols. If Australia and NZ are willing to share with CA, that would be helpful to decide what needs to be done in CA. Ultimately, what is the process of inspection and verification both for stochastic vessels and other "high risk" vessels?

Naomi Parker – Australia has put more effort into this area, but we're happy to share information. We should develop an MOU for information exchange. I'm happy to explore that.

Sarah Gowland – We are very supportive of working collaboratively. We have lots to learn from each other and can supplement each others industry contacts.

John Berge – Are the international representatives [Canada, NZ] working with other U.S. agencies on this?

Naomi Parker, Chris Wiley – Only through IMO.

Naomi Parker – We all have lots of data, vessel-specific data. We should try to pool info if possible. That could be really useful, expand our datasets out to see clearer patterns.

Ian Davidson – We've spoken with others about doing that, to test risk matrices with biological data.

Greg Ruiz – That would be very powerful especially with vessels from different parts of the world. The operations might be similar, but the biology would be different and you may see different manifestations.

Naomi Parker – Also collect data about what management measures are effective or not; this is most obvious when a vessel goes into dry dock. We can inquire about management measures if sea chest is clean or not. What techniques work and don't work. What stuff would be good to have in biofouling management plan? We'd be keen to push for that.

Maurya Falkner – We have already shared a year's worth of HHRF data with DAFF, using that in their risk matrix. We're excited to see how it links up.

Sarah Gowland – We're running NZ data as well. We're about 2 weeks away from being able to give a preliminary analysis of it.

John Berge – There are a fairly limited number of large commercial dry dock facilities in world. Is the extent of cleaning into niche areas a function of customer coming in and demanding or a function of the standard cleaning procedures at dry docks around the world? Certain dry docks can adopt standards vs. a question of something extra demanded by vessel.

Gail Ashton – Seems like they strip everything.

John Kelly – Vessel operators will include specification for cleaning.

John Berge – Including within the niche areas?

Chris Wiley – Vessel can put that into the contract.

Naomi Parker – Dry dock operators are important stakeholders in this whole process about educating vessel owners/operators about what is necessary and effective.

Tom Burke – If we make it part of the management plan, then they have to do it.

John Kelly – Responsible operators ask what they have to do in advance of dry docking.

Sarah Gowland – One of the things that I find when working with commercial shipping guys is that they know they have to sell in a cost-benefit manner. The idea of paint application in niche areas will be a hard sell. Can be difficult to apply hull coating and then niche area coating. CA, NZ, Australia will help drive communication/behavior change.

John Kelly – It costs more money because it's hard to apply in those areas.

Naomi Parker – An increase in cost, but proportionally, not a massive part.

John Kelly – It's less than 1% of the whole dry docking cost.

Greg Ruiz – The discussion is focused on high risk vessels. It would also be productive to think about “low risk” vessels. If a vessel transitions between fresh and marine waters frequently, it will blow a lot away. Some will live, but it may reset the clock for biological colonization. Also going between bioregions may reset the clock a bit. We don't have a great perspective on that yet. It might also be useful to think about low risk vessels or vessel behavior. It may mean that even if a vessel falls into a high risk category for some attributes, because of other low risk behavior overall risk might actually be lower than initially thought. We don't have enough info to make that call yet, but it's valuable to think about for implementation.

John Berge – What is high latitude?

Greg Ruiz - If going to Nome [Alaska] or from pole to pole, transitioning across tropics will blow most things away. But many species in CA could do fine in southeast Alaska, Aleutian chain not high enough. We're more interested in fresh to marine transit.

Naomi Parker – That idea is not picked up right now in guidelines.

John Kelly – Too complicated for now.

Chris Wiley – Fresh water application may be a very viable way of dealing with enforcement issue. It's a really easy thing to deal with.

Greg Ruiz – But it's not a minor issue, there are 14,000 transits through Panama Canal each year.

Sarah Gowland – In Australia, we look at stochastic vessels and divide out by vessel type. We decided to focus on management measures by vessel type, but for part of our border risk assessment it doesn't matter so much about type but more what the vessel was doing. It sounds like there are challenges in getting that info upon arrival.

John Berge – Process question: You need to have regulations by 2012? That requires about 9 months for package to go through including public comment etc. Has CSLC formulated a timeline? When do you need to have draft language?

Chris Scianni – We're looking at about 9 months for rulemaking. Want to make sure to have proposed regulations on paper next February to submit to OAL.

Maurya Falkner – If we don't hit January 1, 2012, it's not the end of world. If we have enough data, input from international, national entities to move forward and make some changes, then we should do that. If everything is up in the air, then may request additional time. Sounds like we have enough data and impetus to move forward on biofouling management plan and then go from there.

John Kelly – Need to review what goes on at BLG 15 next Feb.

Ian Davidson – Is TAG process at the point of putting together text for next meeting?

John Kelly – Need to get drafting now.

Maurya Falkner – Will see if we need another face to face meeting or electronic/email. We'll work on getting a straw person regulation down.

Lisa Swanson – About the whole reporting form issue, is it a given that we'll be doing it in 2011?

Maurya Falkner – Yes.

Naomi Parker – The HHRF Data is useful for us as well. There is an opportunity for NZ, Australia, Canada, and CA to work together to feed data into the international process and to make sure the guidelines are fit for purpose. The data collection isn't going to go to waste.

Lynn Takata – If we do risk evaluation will certainly need data forms. They may be shorter over time.

Lisa Swanson – A lot of this data information will be part of the plan.

Maurya Falkner – You can count on submitting the form in 2011. Expect there will be changes in the future, but we don't know yet.

Ian Davidson – Right now just two data points [2008, 2009]. Seems like a lot of data, but really only two data points.

Maurya Falkner – For each vessel still not a lot of information. Trying to understand patterns we are seeing for voyage characteristics. Don't have access to everything a vessel will do over the course of a year. For example, how do these data relate to what SERC sees on dives, etc.

Ian Davidson – We can't detect a pattern on two points. Example – the lay-up duration increased [2008 to 2009], but don't know if that's a quirk or if pattern will change. It is very useful data.

Chris Scianni – Thank you for coming, Will develop straw person plan for biofouling management plan and draft regulation language that will be publicly available. We will do this over next couple of weeks and will be in touch with everyone.

Maurya Falkner – We will have the group review the meeting notes. We'll look at the management plan and identify important parameters. Put numbers to things to deal with stochastic vessels etc. Then will figure out when next meeting will be.

Adjourn

DEFINITION OF SLIME

Perhaps in the Draft Biofouling document there could be some mention of 'slime' or maybe a topic of future research to include 'slime' as a topic of interest and needing further definition.

The reason I say this is that it could be worthwhile to educate shipowners that their definition of slime (on the hydrodynamics surfaces) could be a biorisk. In other words, when I talk to shipowners about slime they usually define slime as a thick layer of marine growth that may not yet equate to grass or weed growth but is far more prevalent than how a marine biologist would define slime. Therefore between biologists and ship operators there is a large difference in how slime is defined and the ship operators definition of slime equates to much more marine growth than the definition from a biological viewpoint. This may also apply to diving contractors who inspect underwater ship hulls and to date are not well trained in quantifying degrees of slime. Of course from a ship operations viewpoint keeping a hull free of even visible slime is not possible due to cost and how often the hull may need cleaning. Just keep in mind that in ship operations no one has a uniform definition of slime.

FLAT BOTTOM OF HULL – NICHE AREA OR NOT A NICHE AREA

While the flat bottom of a ship hull is not a major hydrodynamic surface it does in some cases foul quite heavily and adversely effects fuel efficiency. Furthermore when shipowners contract with diving contractors to clean the hull, the flat bottom is often times excluded from the in water hull cleaning. The reason is that it increases the cost of the hull cleaning substantially and takes more time for cleaning. In most cases the flat bottom is clean but simply pointing out that it is often neglected from any inwater cleanings until drydocking. Therefore it seems that the flat bottom of the hull is a hydrodynamic surface area but due to it being excluded from most in water cleanings, hence, could be considered a niche area.